## An Abstract of a Letter from Mr. J. Flamsteed, Math. Reg. & F. of the R. S. giving an account of the Eclipses of ♃ˢ Satellits, anno 1686; and containing a Table of the Parallaxes of ♃ˢ Orb, and an Ephemeris of ♃ˢ Geocentric Places for the same year.

Sir,

I Give you here the Eclipses of *Jupiters Satellits* for the next year 1686, deduced from the same numbers by which I calculated those of the years 1684, and 1685, printed in the *Transactions*. I shall not need to shew here again, how to find within what limits on our Earth any of them, not visible with us, will be observable; having done it already both in *English* and *Latin* in those Tracts; I shall therefore only tell you that all my observations of them since made, (which have not been many by reason of our much cloudy weather and my frequent avocations,) have fully made good my assertions concerning them, and that I have not found my numbers at any time since to err above one minute in the *Eclipses* of the first or innermost *Satellit*; so that if a way were found of managing a Tube of 8, 10, or 12 foot long at *Sea*, and Observing the time as exactly as we can at land, Observations of these *Eclipses* would certainly give us the difference of Longitude, as exactly as the Latitudes are pretended to be Observed by our more knowing *Sea-Men*, and certainly much better then the Observations of *Lunar Eclipses*. How the differences of Longitude are gained by them, you will see by the following Examples, the latter of which I have purposely produced to

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ſhew the good agreement of my numbers with the heavens.

Anno 1680, *October* 23, old *Stile*, Signior *Joſeph Ponthia*, and *Marco Antonio Cellio* with a Teleſcope of 25 *Palms* long, Obſerved the totall Immerſion of the firſt *Satellit* into ♃s ſhadow at Rome at 10$^h$. 07′. 53″. p. m, which in our Obſervatory here I noted at 9. 15. 41, whoſe difference is the difference of our Meridians = 52′-12″, or 13°. 0′3.

Again, *January* the 28 1685, Signior *Francis Blanchini*, having received my Catalogue of the *Eclipſes* of the *Satellits* for that year, obſerved the totall Immerſion of the 1$^{st}$ at *Rome*, at         11$^h$. 19$\frac{3}{4}$ which I ſaw not here, but my numbers give at   10. 27$\frac{1}{4}$.
Therefore the difference of *Meridians* is 0    52$\frac{1}{2}$; and *Rome* lies ſo much more Eaſterly then the Obſervatory at *Greenwich*, agreeing with the former obſervation, and ſhewing the error of the Tables to be inſenſible.

The noble *Tycho* judged therefore not much amiſs, when he placed *Uraniburg* and *Rome* under the ſame *Meridian*; for by ſeverall obſervations of *Satellit Eclipſes*, it is evident, that the difference of *Meridians* betwixt *Uraniburg* and our Obſervatory is 51′. 10″. of time, ſo that *Rome* lies only one minute of time or $\frac{1}{4}$ of a degree to the Eaſt of *Uraniburg*.

Some Ingenuous perſons having often wiſhed that ſuch Tables of the *Satellits* motions were publiſhed, as might ſerve to find their appearences at any given time, tho I think it not fit (by reaſon they are capable of much Correction and great improvement) to publiſh mine at preſent: yet for the ſake of the diligent obſerver, I have contrived a ſmall Inſtrument, whereby with the ſole help of the following Catalogue, and the Table of the *Parallaxes* of ♃s orb, their diſtances from the *Axis* of ♃ may be found to any given time within the compaſs of the next year, and for any future year by the like Tables.        To

To make the Catalogue of *Eclipfes*, as alfo the Table of the *Parallaxes* of ♃, it was neceffary firft to make a Table of ♃s *Heliocentrick* places, to which the *Parallaxes* being applied, give the *Geocentrick*. The vulgar Ephemerides are very faulty in this Planet, and no good one being extant this year, I here give you a copy of mine deduced from my own corrected Tables, which I am perfwaded will be of good ufe and very acceptable to the Ingenuous Student of *A-ftronomy*.

## Tabula Parallaxium Orbitæ Jovialis Anno. 1686.

| D | Janu. Parallax. Adde. ° ' | Febr. Parall. Adde. ° ' | Martii Parall. Adde ° ' | Apri. Parall. Adde. ° ' | Maii Parall. Sub. ° ' | Junii Parall. Sub. ° ' |
|---|---|---|---|---|---|---|
| 1 | 9 22 | 10 32 | 9 18 | 5 11 | 0 41 | 6 29 |
| 2 | 9 26 | 10 31 | 9 13 | 5 00 | 0 53 | 6 39 |
| 3 | 9 31 | 10 31 | 9 07 | 4 49 | 1 05 | 6 48 |
| 4 | 9 35 | 10 30 | 9 01 | 4 39 | 1 18 | 6 58 |
| 5 | 9 39 | 10 30 | 8 55 | 4 28 | 1 30 | 7 06 |
| 6 | 9 42 | 10 29 | 8 49 | 4 17 | 1 42 | 7 15 |
| 7 | 9 46 | 19 28 | 8 43 | 4 06 | 1 54 | 7 24 |
| 8 | 9 50 | 10 27 | 8 37 | 3 55 | 2 06 | 7 32 |
| 9 | 9 53 | 10 26 | 8 30 | 3 44 | 2 18 | 7 41 |
| 10 | 9 56 | 10 24 | 8 24 | 3 32 | 2 30 | 7 49 |
| 11 | 9 59 | 10 22 | 8 17 | 3 21 | 2 42 | 7 57 |
| 12 | 10 02 | 10 20 | 8 09 | 3 09 | 2 54 | 8 05 |
| 13 | 10 05 | 10 18 | 8 02 | 2 57 | 3 06 | 8 12 |
| 14 | 10 08 | 10 15 | 7 54 | 2 45 | 3 17 | 8 20 |
| 15 | 10 10 | 10 13 | 7 47 | 2 33 | 3 29 | 8 27 |
| 16 | 10 13 | 10 10 | 7 39 | 2 22 | 3 40 | 8 34 |
| 17 | 10 15 | 10 07 | 7 31 | 2 10 | 3 52 | 8 41 |
| 18 | 10 17 | 10 04 | 7 23 | 1 58 | 4 03 | 8 48 |
| 19 | 10 19 | 10 01 | 7 14 | 1 46 | 4 14 | 8 55 |
| 20 | 10 21 | 9 57 | 7 06 | 1 34 | 4 25 | 9 01 |
| 21 | 10 23 | 9 54 | 6 57 | 1 22 | 4 36 | 9 07 |
| 22 | 10 25 | 9 50 | 6 48 | 1 09 | 4 47 | 9 13 |
| 23 | 10 26 | 9 46 | 6 39 | 0 57 | 4 58 | 9 19 |
| 24 | 10 27 | 9 42 | 6 29 | 0 45 | 5 09 | 9 25 |
| 25 | 10 29 | 9 37 | 6 20 | 0 32 | 5 19 | 9 31 |
| 26 | 10 30 | 9 33 | 6 11 | 0 21 | 5 30 | 9 36 |
| 27 | 10 31 | 9 28 | 6 01 | 0 09 | 5 40 | 9 41 |
| 28 | 10 32 | 9 23 | 5 51 | Sub. 04 | 5 50 | 9 46 |
| 29 | 10 32 | | 5 42 | 0 16 | 6 00 | 9 51 |
| 30 | 10 32 | | 5 31 | 0 28 | 6 10 | 9 55 |
| 31 | 10 32 | | 5 21 | | 6 19 | |

*Julii*

| D | Julii Parall. Sub. | | Augu. Parall. Sub. | | Sept. Parall. Sub. | | Octob. Parall. Sub. | | Nov. Parall. Sub. | | Decem. Parall. Addo. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ° | ′ | ° | ′ | ° | ′ | ° | ′ | ° | ′ | ° | ′ |
| 1 | 10 | 00 | 10 | 51 | 9 | 17 | 6 | 10 | 2 | 00 | 2 | 21 |
| 2 | 10 | 04 | 10 | 49 | 9 | 12 | 6 | 03 | 1 | 51 | 2 | 30 |
| 3 | 10 | 08 | 10 | 48 | 9 | 07 | 5 | 55 | 1 | 43 | 2 | 38 |
| 4 | 10 | 12 | 10 | 47 | 9 | 02 | 5 | 48 | 1 | 34 | 2 | 47 |
| 5 | 10 | 16 | 10 | 46 | 8 | 57 | 5 | 41 | 1 | 25 | 2 | 55 |
| 6 | 10 | 19 | 10 | 44 | 8 | 52 | 5 | 33 | 1 | 17 | 3 | 04 |
| 7 | 10 | 23 | 19 | 42 | 8 | 46 | 5 | 25 | 1 | 08 | 3 | 12 |
| 8 | 10 | 26 | 10 | 41 | 8 | 40 | 5 | 17 | 0 | 59 | 3 | 21 |
| 9 | 10 | 29 | 10 | 39 | 8 | 35 | 5 | 09 | 0 | 51 | 3 | 29 |
| 10 | 10 | 32 | 10 | 36 | 8 | 29 | 5 | 02 | 0 | 42 | 3 | 38 |
| 11 | 10 | 34 | 10 | 34 | 8 | 23 | 4 | 53 | 0 | 33 | 3 | 46 |
| 12 | 10 | 37 | 10 | 32 | 8 | 17 | 4 | 46 | 0 | 24 | 3 | 54 |
| 13 | 10 | 39 | 10 | 29 | 8 | 12 | 4 | 38 | 0 | 16 | 4 | 02 |
| 14 | 10 | 41 | 10 | 26 | 8 | 06 | 4 | 29 | 0 | 07 | 4 | 10 |
| 15 | 10 | 43 | 10 | 24 | 7 | 59 | 4 | 21 | Add: | 2 | 4 | 18 |
| 16 | 10 | 45 | 10 | 21 | 7 | 53 | 4 | 13 | 0 | 11 | 4 | 26 |
| 17 | 10 | 46 | 10 | 18 | 7 | 47 | 4 | 06 | 0 | 20 | 4 | 35 |
| 18 | 10 | 48 | 10 | 15 | 7 | 40 | 3 | 57 | 0 | 28 | 4 | 43 |
| 19 | 10 | 49 | 10 | 11 | 7 | 34 | 3 | 49 | 0 | 37 | 4 | 51 |
| 20 | 10 | 50 | 10 | 08 | 7 | 27 | 3 | 41 | 0 | 46 | 4 | 59 |
| 21 | 10 | 51 | 10 | 04 | 7 | 21 | 3 | 32 | 0 | 55 | 5 | 07 |
| 22 | 10 | 51 | 10 | 00 | 7 | 14 | 3 | 24 | 1 | 03 | 5 | 15 |
| 23 | 10 | 52 | 9 | 56 | 7 | 07 | 3 | 16 | 1 | 12 | 5 | 22 |
| 24 | 10 | 52 | 9 | 53 | 7 | 00 | 3 | 08 | 1 | 21 | 5 | 30 |
| 25 | 10 | 53 | 9 | 49 | 6 | 53 | 2 | 59 | 1 | 29 | 5 | 38 |
| 26 | 10 | 53 | 9 | 45 | 6 | 46 | 2 | 51 | 1 | 38 | 5 | 46 |
| 27 | 10 | 53 | 9 | 40 | 6 | 39 | 2 | 43 | 1 | 47 | 5 | 52 |
| 28 | 10 | 53 | 9 | 36 | 6 | 32 | 2 | 34 | 1 | 55 | 6 | 00 |
| 29 | 10 | 53 | 6 | 31 | 6 | 25 | 2 | 25 | 2 | 04 | 6 | 08 |
| 30 | 10 | 52 | 9 | 27 | 6 | 18 | 2 | 17 | 2 | 13 | 6 | 15 |
| 31 | 10 | 51 | 9 | 22 | | | 2 | 08 | | | 6 | 23 |

Catalogus Eclipſium Comitum Jovialium ubique terrarum Anno 1686. viſibilium, tempora apparentia Ingreſſuum illorum in Jovis Umbram & ab ea Emerſionum, ad Meridianum Obſervatorii Grenoviſani ſupputata exhibens, à *Johanne, Flamſteedio* Math. Reg. & R. S. S.

### Januarii

| d. | h. | ' | | |
|---|---|---|---|---|
| 1 | 08 | 18 | 2 | i |
|  | 11 | 27 | 1 | i |
| 2 | 20 | 47 | 3 { | i |
|  | 23 | 23 |  | e |
| 3 | 05 | 55 | 1 | i |
| 4 | 21 | 35 | 2 | i |
| 5 | 00 | 22 | 1 | i |
| 6 | 18 | 50 | 1 * | i |
| 8 | 10 | 50 | 2 | i |
|  | 13 | 18 |  | i |
| 10 | 00 | 42 | 3 { | i |
|  | 3 | 18 |  | e |
|  | 7 | 45 | 1 | i |
| 12 | 0 | 07 | 2 | i |
|  | 2 | 13 | 1 | i |
| 13 | 20 | 41 | 1 | i |
| 15 | 13 | 22 | 2 | i |
|  | 15 | 09 | 1 * | i |
| 17 | 05 | 37 | 3 { | i |
|  | 08 | 13 |  | e |
|  | 09 | 37 | 1 | i |
| 19 | 02 | 39 | 2 | i |
|  | 4 | 04 | 1 | i |
| 20 | 22 | 32 | 1 | i |
| 22 | 15 | 55 | 2 * | i |
|  | 17 | 00 | 1 * | i |
| 24 | 08 | 33 | 3 { | i |
|  | 11 | 09 |  |  |
|  | 11 | 28 | 1 |  |
| 26 | 05 | 12 | 2 | i |
|  | 5 | 57 | 1 | i |
| 28 | 0 | 25 |  | i |
| 29 | 18 | 29 | 2 * | i |
|  | 18 | 53 | 1 * | i |
| 31 | 12 | 30 | 3 | i |
|  | 13 | 21 | 1 | i |
|  | 15 | 06 | 3 * | e |

### Februarii

| d. | h. | ' | | |
|---|---|---|---|---|
| 2 | 07 | 45 | 2 | i |
|  | 7 | 49 | 1 | i |
| 4 | 02 | 18 | 1 | i |
| 5 | 20 | 46 | 1 | i |
|  | 21 | 03 | 2 | i |
| 7 | 15 | 14 | 1 * | i |
|  | 16 | 27 | 3 * { | i |
|  | 19 | 04 |  | e |
| 9 | 09 | 43 | 1 | i |
|  | 10 | 20 | 2 | i |
| 11 | 04 | 11 | 1 | i |
| 12 | 22 | 40 | 1 | i |
|  | 23 | 38 | 2 | i |
| 14 | 17 | 08 | 1 * | i |
|  | 20 | 24 | 3 { | i |
|  | 23 | 01 |  | e |
| 16 | 11 | 37 | 1 | i |
|  | 12 | 55 | 2 * | i |
| 18 | 06 | 06 | 1 | i |
| 20 | 00 | 34 | 1 | i |
|  | 2 | 13 | 2 | i |
| 21 | 19 | 03 | 1 | i |
| 22 | 00 | 24 | 3 | i |
| 22 | 03 | 01 | 3 | e |
| 23 | 13 | 31 | 1 * | i |
|  | 15 | 31 | 2 * | i |
| 25 | 8 | 00 | 1 | i |
| 27 | 02 | 34 | 1 | i |
|  | 4 | 49 | 2 | i |
| 28 | 20 | 57 | 1 | i |

### Martii

| d. | h. | ' | | |
|---|---|---|---|---|
| 1 | 4 | 23 | 3 | i |
| 2 | 15 | 26 | 1 * | i |
|  | 18 | 07 | 2 * | i |
| 4 | 09 | 55 | 1 | i |
| 6 | 04 | 24 | 1 | i |
|  | 7 | 25 | 2 | i |
| 7 | 22 | 53 | 1 | i |
| 8 | 08 | 22 | 3 | i |
| 9 | 17 | 22 | 1 * | i |
|  | 20 | 43 | 2 | i |
| 11 | 11 | 50 | 1 | i |
| 13 | 06 | 19 | 1 | i |
|  | 9 | 52 | 2 | i |
| 15 | 00 | 48 | 1 | i |
|  | 12 | 22 | 3 * | i |
| 16 | 19 | 17 | 1 | i |
|  | 23 | 20 | 2 | i |
| 18 | 13 | 46 | 1 * | i |
| 20 | 08 | 15 | 1 | i |
|  | 12 | 38 | 2 * | i |
| 22 | 02 | 44 | 1 | i |
|  | 16 | 22 | 3 * | i |
| 23 | 21 | 13 | 1 | i |
| 24 | 01 | 54 | 2 | i |
| 25 | 15 | 50 | 1 * | i |
| 27 | 10 | 10 | 1 * | i |
|  | 15 | 15 | 2 * | i |
| 29 | 04 | 39 | 1 | i |
|  | 20 | 21 | 3 | i |
| 30 | 23 | 08 | 1 | i |
| 31 | 04 | 33 | 2 | i |

*Apr.*

| Aprilis d. | h. | ' | | | Maii d. | h. | ' | | | Junii d. | h. | ' | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17 | 37 | 1 | ✳i | 1 | 21 | 59 | 1 | e | 1 | 00 | 03 | 1 | e |
| 3 | 12 | 05 | 1 | ✳i | 2 | 06 | 54 | 2 | e | 2 | 10 | 49 | 3 | ✳e |
|  | 17 | 51 | 2 | i | 3 | 16 | 28 | 1 | e |  | 18 | 30 | 1 | e |
| 5 | 06 | 35 | 1 | i | 4 | 18 | 57 | 3 | e | 3 | 06 | 31 | 2 | e |
| 6 | 00 | 21 | 3 | i | 5 | 10 | 56 | 1 | ✳e | 4 | 13 | 00 | 1 | ✳e |
| 7 | 01 | 03 | 1 | i |  | 20 | 12 | 2 | e | 6 | 07 | 28 | 1 | e |
|  | 7 | 09 | 2 | i | 7 | 05 | 25 | 1 | e |  | 19 | 48 | 2 | e |
| 8 | 19 | 32 | 1 | i | 8 | 23 | 53 | 1 | e | 8 | 01 | 55 | 1 | e |
| 10 | 14 | 01 | 1 | ✳i | 9 | 09 | 30 | 2 | ✳e | 9 | 14 | 47 | 3 | e |
|  | 20 | 28 | 2 | i | 10 | 18 | 22 | 1 | e |  | 20 | 25 | 1 | e |
| 12 | 08 | 10 | 1 | i | 11 | 22 | 55 | 3 | e | 10 | 09 | 06 | 2 | ✳e |
| 13 | 04 | 20 | 3 | i | 12 | 12 | 50 | 1 | ✳e | 11 | 14 | 53 | 1 | e |
| 14 | 02 | 58 | 1 | i |  | 22 | 47 | 2 | e | 13 | 09 | 21 | 1 | ✳e |
|  | 9 | 46 | 2 | ✳i | 14 | 07 | 19 | 1 | e |  | 22 | 23 | 2 | e |
| 15 | 21 | 27 | 1 | i | 16 | 01 | 47 | 1 | e | 15 | 03 | 49 | 1 | e |
| 17 | 15 | 57 | 1 | ✳i |  | 12 | 06 | 2 | ✳e | 16 | 18 | 45 | 3 | e |
|  | 23 | 04 | 2 | i | 17 | 20 | 15 | 1 | e |  | 22 | 18 | 1 | e |
| 19 | 10 | 25 | 1 | ✳i | 19 | 02 | 53 | 3 | e | 17 | 11 | 40 | 2 | ✳e |
| 20 | 08 | 20 | 3 | * i | 19 | 14 | 44 | 1 | ✳e | 18 | 16 | 46 | 1 | e |
| 21 | 04 | 54 | 1 | i | 20 | 01 | 22 | 2 | e | 20 | 11 | 15 | 1 | ✳e |
|  | 12 | 22 | 2 | ✳i | 21 | 09 | 12 | 1 | ✳e | 21 | 00 | 58 | 2 | e |
| 22 | 23 | 22 | 1 | i | 23 | 03 | 41 | 1 | e | 22 | 05 | 43 | 1 | e |
| 24 | 17 | 51 | 1 | i |  | 14 | 39 | 2 | ✳e | 23 | 22 | 43 | 3 | e |
| 25 | 01 | 40 | 2 | i | 24 | 22 | 09 | 1 | e | 24 | 00 | 12 | 1 | e |
| 26 | 12 | 19 | 1 | ✳i | 20 | 06 | 51 | 3 | e |  | 14 | 15 | 2 | e |
| 27 | 12 | 18 | 3 | ✳i |  | 16 | 37 | 1 | e | 25 | 18 | 40 | 1 | e |
| ☍ | ☉ | ♃ |  |  | 27 | 03 | 57 | 2 | e | 27 | 13 | 09 | 1 | e |
| 28 | 09 | 02 | 1 | ✳e | 28 | 11 | 05 | 1 | ✳e | 28 | 03 | 33 | 2 | e |
|  | 17 | 37 | 2 | e | 30 | 05 | 34 | 1 | e | 29 | 07 | 37 | 1 | e |
| 30 | 03 | 31 | 1 | e |  | 16 | 14 | 2 | e | 30 | 23 | 58 | 3 | i |

*Julii*

### Julii

| d. | h. | ' | |
|---|---|---|---|
| 1 | 02 | 06 | 1 e |
|  | 2 | 42 | 3 e |
|  | 16 | 50 | 2 e |
| 2 | 20 | 34 | 1 e |
| 4 | 15 | 03 | 1 e |
| 5 | 06 | 08 | 2 e |
| 6 | 09 | 31 | 1 ✳ e |
| 8 | 03 | 59 | 3 i |
|  | 3 | 59 | 1 e |
|  | 6 | 41 | 3 e |
|  | 19 | 26 | 2 e |
| 9 | 22 | 29 | 1 e |
| 11 | 16 | 57 | 1 e |
| 12 | 08 | 44 | 2 ✳ e |
| 13 | 11 | 26 | 1 e |
| 15 | 05 | 55 | 1 e |
|  | 7 | 57 | ✳ i |
|  | 10 | 40 | 3 ✳ e |
|  | 22 | 02 | 2 e |
| 17 | 00 | 24 | 1 e |
| 18 | 18 | 53 | 1 e |
| 19 | 11 | 21 | 2 e |
| 20 | 13 | 21 | 1 e |
| 22 | 07 | 51 | 1 ✳ e |
|  | 11 | 56 | 3 { i |
|  | 14 | 41 | { e |
| 23 | 00 | 39 | 2 e |
| 24 | 02 | 19 | 1 e |
| 25 | 20 | 49 | 1 e |
| 27 | 13 | 57 | 2 e |
|  | 15 | 17 | 1 e |
| 29 | 09 | 47 | 1 ✳ e |
|  | 15 | 56 | 3 { i |
|  | 18 | 41 | { e |
| 30 | 03 | 16 | 2 e |
| 31 | 04 | 15 | 1 e |

### Augusti

| d. | h. | ' | |
|---|---|---|---|
| 1 | 22 | 44 | 1 e |
| 2 | 16 | 35 | 2 e |
| 3 | 17 | 14 | 1 e |
| 5 | 11 | 43 | 1 e |
|  | 19 | 57 | i |
|  | 22 | 43 | 3 { e |
| 6 | 05 | 53 | 2 e |
| 7 | 06 | 12 | 1 e |
| 9 | 00 | 41 | 1 e |
|  | 18 | 12 | 2 e |
| 10 | 19 | 10 | 1 i |
| 12 | 13 | 39 | 1 i |
|  | 23 | 58 | i |
| 13 | 02 | 44 | 3 { e |
|  | 8 | 51 | 2 ✳ e |
| 14 | 8 | 09 | 1 ✳ e |
| 16 | 02 | 38 | 1 e |
|  | 21 | 51 | 2 e |
| 17 | 21 | 07 | 1 e |
| 19 | 15 | 36 | 1 e |
| 20 | 03 | 59 | i |
|  | 6 | 45 | 3 { e |
|  | 11 | 10 | 2 e |
| 21 | 10 | 05 | 1 e |
| 23 | 04 | 35 | 1 e |
| 24 | 00 | 29 | 2 e |
|  | 23 | 04 | 1 e |
| 26 | 17 | 33 | 1 e |
| 27 | 08 | 01 | i |
|  | 10 | 48 | 3 ✳ { e |
|  | 13 | 48 | 2 e |
| 28 | 12 | 03 | 1 e |
| 30 | 06 | 32 | 1 e |
| 31 | 03 | 08 | 2 e |

### Septemb.

| d. | h. | ' | |
|---|---|---|---|
| 1 | 01 | 02 | 1 e |
| 2 | 19 | 31 | 1 e |
| 3 | 12 | 02 | i |
|  | 13 | 50 | 3 { e |
|  | 16 | 27 | 2 e |
| 4 | 14 | 00 | 1 e |
| 6 | 08 | 30 | 1 e |
| 7 | 05 | 46 | 2 e |
| 8 | 02 | 59 | 1 e |
| 9 | 21 | 29 | 1 e |
| 10 | 16 | 04 | i |
|  | 18 | 52 | 3 { e |
|  | 19 | 05 | 2 e |
| 11 | 15 | 58 | 1 e |
| 13 | 10 | 27 | 1 e |
| 14 | 08 | 25 | 2 e |
| 15 | 04 | 57 | 1 e |
| 16 | 23 | 26 | 1 e |
| 17 | 21 | 44 | 2 e |
|  | 22 | 54 | 3 e |
| 18 | 17 | 55 | 1 e |
| 20 | 12 | 25 | 1 e |
| 21 | 11 | 03 | 2 e |
| 22 | 06 | 44 | 1 ✳ e |
| 24 | 01 | 23 | 1 e |
| 25 | 00 | 23 | 2 e |
|  | 2 | 56 | 3 e |
|  | 19 | 52 | 1 e |
| 27 | 14 | 22 | 1 e |
| 28 | 13 | 42 | 2 e |
| 29 | 08 | 51 | 1 e |

*Octobris*

| Octobris | | | | Decemb. | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| d. | h. | | | d. | h. | | | | |
| 1 | 02 20 | 1 | e | 1 | 10 12 | 2 | i | | |
| 2 | 03 01 | 2 | e | | 23 38 | 1 | i | | |
| | 4 58 | 3 | e | 3 | 18 06 | 1 | i | | |
| | 21 49 | 1 | e | 4 | 23 28 | 2 | i | | |
| 4 | 16 18 | 1 | e | 5 | 12 33 | 1 | i | | |
| 5 | 16 19 | 2 | e | | 15 45 | 3 | i | | |
| 6 | 10 47 | 1 | e | 7 | 07 00 | 1 | i | | |
| 8 | 05 16 | 1*e | | 8 | 12 15 | 2 | i | | |
| 9 | 05 38 | 2*e | | 9 | 01 29 | 1 | i | | |
| | 10 58 | 3 | e | 10 | 19 56 | 1*i | | | |
| | 23 45 | 1 | e | 12 | 02 00 | 2 | i | | |
| 11 | 18 14 | 1 | e | | 14 24 | 1 | i | | |
| 12 | 18 56 | 2 | e | | 19 40 | 3*i | | | |
| 13 | 12 43 | 1 | e | 14 | c8 51 | 1 | i | | |
| 15 | 07 12 | 1 | e | 15 | 15 15 | 2 | i | | |
| 16 | 8 15 | 2 | e | 16 | 03 18 | 1 | i | | |
| | 14 58 | 3· | e | 17 | 21 46 | 1 | i | | |
| 17 | 01 41 | 1 | e | 19 | 04 31 | 2 | i | | |
| 18 | 20 09 | 1 | e | | 16 14 | 1 | i | | |
| 19 | 21 33 | 2 | e | | 23 34 | 3 | i | | |
| 20 | 14 38 | 1 | e | 21 | 10 42 | 1 | i | | |
| 22 | 09 07 | 1 | e | 22 | 17 46 | 2*i | | | |
| 23 | 10 51 | 2 | e | 23 | 05 09 | 1 | i | | |
| | 18 58 | 3 - | e | 24 | 23 37 | 1 | i | | |
| 24 | 03 35 | 1 | e | 26 | 07 03 | 2 | i | | |
| 25 | 02 04 | 1 | e | | 18 04 | 1 * i | | | |
| 27 | 00 08 | 2 | e | 27 | 02 29 | 3 | i | | |
| | 16 32 | 1 | e | 28 | 12 32 | 1 | i | | |
| 29 | 11 01 | 1 | e | 20 | 20 18 | 2 * i | | | |
| 30 | 13 26 | 2 | e | 30 | 07 00 | 1 | i | | |
| | 22 57 | 3 | e | | | | | | |
| 31 | 05 29 | 1*e | | | | | | | |

Novembre toto ♃
latet sub Radiis solis

Quartus hoc Anno Umbram non ingreditur, sed ♃ e sole emergente, in penumbram solummodo incidit. Interea planum ad Axem Umbræ & Jovis orbitam perpendiculare pertransit temporibus infra notatis. 1686.

| | d. | h. | |
|---|---|---|---|
| Janua. | 12 | 12 | 07 |
| | 29 | 6 | 0 |
| Februa' | 15 | 0 | 0 |
| Martii | 3 | 17 | 56 |
| | 20 | 11*57 | |
| Aprilis | 6 | 5 | 59 |
| | 23 | 0 | 00 |
| Maii | 9 | 17 | 59 |
| | 26 | 11*57 | |
| Junii | 12 | 5 | 54 |
| | 28 | 23 | 52 |
| Julii | 15 | 17 | 52 |
| Augusti | 1 | 11 | 55 |
| | 18 | 6 | 00 |
| Septemb. | 4 | 0 | 08 |
| | 20 | 18 | 15 |
| Octob. | 7 | 12 | 21 |
| | 24 | 6 | 23 |
| Decemb. | 13 | 12 | 8 |
| | 30 | 5 | 39 |

2ᵉ post. in penumbra.

O o o     Jovis

## Jovis Loca Geocentrica Anno 1686.

| D | Janu. ° m ′ | | Feb. ° m ′ | | Martii. ° m ′ | | April. ° m ′ | | Maii. ° m ′ | | Junii ° m ′ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 12 | 21 | 45 | 22 | 40 | 20 | 56 | 17 | 23 | 13 | 59 |
| 2 | 18 | 21 | 21 | 49 | 22 | 39 | 20 | 50 | 17 | 16 | 13 | 54 |
| 3 | 18 | 30 | 21 | 53 | 22 | 38 | 20 | 44 | 17 | 08 | 13 | 49 |
| 4 | 18 | 38 | 21 | 57 | 22 | 37 | 20 | 38 | 17 | 1 | 13 | 45 |
| 5 | 18 | 47 | 22 | 01 | 22 | 36 | 20 | 32 | 16 | 53 | 13 | 41 |
| 6 | 18 | 55 | 22 | 04 | 22 | 34 | 20 | 25 | 16 | 48 | 13 | 37 |
| 7 | 19 | 03 | 22 | 08 | 22 | 33 | 20 | 19 | 16 | 38 | 13 | 33 |
| 8 | 19 | 12 | 22 | 12 | 22 | 31 | 20 | 12 | 16 | 31 | 13 | 29 |
| 9 | 19 | 20 | 22 | 15 | 22 | 29 | 20 | 06 | 16 | 24 | 13 | 25 |
| 10 | 19 | 27 | 22 | 18 | 22 | 27 | 19 | 59 | 16 | 16 | 13 | 22 |
| 11 | 19 | 35 | 22 | 21 | 22 | 25 | 19 | 52 | 16 | 9 | 13 | 18 |
| 12 | 19 | 43 | 22 | 24 | 22 | 22 | 19 | 45 | 16 | 2 | 13 | 15 |
| 13 | 19 | 50 | 22 | 26 | 22 | 19 | 19 | 38 | 15 | 54 | 13 | 12 |
| 14 | 19 | 51 | 22 | 28 | 22 | 17 | 19 | 31 | 15 | 47 | 13 | 9 |
| 15 | 20 | 05 | 22 | 30 | 22 | 13 | 19 | 24 | 15 | 40 | 13 | 7 |
| 16 | 20 | 12 | 22 | 32 | 22 | 10 | 19 | 16 | 15 | 34 | 13 | 4 |
| 17 | 20 | 19 | 22 | 34 | 22 | 06 | 19 | 9 | 15 | 27 | 13 | 2 |
| 18 | 20 | 25 | 22 | 35 | 22 | 03 | 19 | 2 | 15 | 20 | 13 | 0 |
| 19 | 20 | 32 | 22 | 37 | 21 | 59 | 18 | 55 | 15 | 14 | 12 | 58 |
| 20 | 20 | 38 | 22 | 38 | 21 | 55 | 18 | 47 | 15 | 07 | 12 | 56 |
| 21 | 20 | 45 | 22 | 39 | 21 | 51 | 18 | 40 | 15 | 1 | 12 | 54 |
| 22 | 20 | 51 | 22 | 40 | 21 | 47 | 18 | 32 | 14 | 55 | 12 | 53 |
| 23 | 20 | 57 | 22 | 40 | 21 | 43 | 18 | 25 | 14 | 48 | 12 | 52 |
| 24 | 21 | 03 | 22 | 41 | 21 | 38 | 18 | 17 | 14 | 42 | 12 | 51 |
| 25 | 21 | 09 | 22 | 41 | 21 | 33 | 18 | 9 | 14 | 36 | 12 | 50 |
| 26 | 21 | 15 | 22R | 41 | 21 | 28 | 18 | 2 | 14 | 31 | 12 | 49 |
| 27 | 21 | 20 | 22 | 41 | 21 | 23 | 17 | 54 | 14 | 25 | 12 | 49 |
| 28 | 21 | 26 | 22 | 40 | 21 | 18 | 17 | 47 | 14 | 20 | 12 | 48 |
| 29 | 21 | 31 | | | 21 | 13 | 17 | 39 | 14 | 14 | 12 | 48 |
| 30 | 21 | 36 | | | 21 | 8 | 17 | 31 | 14 | 9 | 12D | 48 |
| 31 | 21 | 40 | | | 21 | 2 | | | 14 | 4 | | |

Julii

| D | Julii ° ♏ | | Aug. ° ♏ | | Septem. ° ♏ | | Octob. ° ♏ | | Novem ° ♐ | | Decem. ° ♐ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 48 | 14 | 22 | 18 | 21 | 23 | 49 | 0 | 26 | 7 | 10 |
| 2 | 12 | 49 | 14 | 28 | 18 | 31 | 24 | 1 | 0 | 39 | 7 | 23 |
| 3 | 12 | 49 | 14 | 34 | 18 | 41 | 24 | 14 | 0 | 53 | 7 | 36 |
| 4 | 12 | 50 | 14 | 40 | 18 | 51 | 24 | 26 | 1 | 6 | 7 | 49 |
| 5 | 12 | 51 | 14 | 46 | 19 | 0 | 24 | 38 | 1 | 20 | 8 | 3 |
| 6 | 12 | 52 | 14 | 52 | 19 | 10 | 24 | 50 | 1 | 33 | 8 | 16 |
| 7 | 12 | 54 | 14 | 59 | 19 | 20 | 25 | 03 | 1 | 46 | 8 | 29 |
| 8 | 12 | 55 | 15 | 5 | 19 | 31 | 25 | 15 | 2 | 0 | 8 | 42 |
| 9 | 12 | 57 | 15 | 12 | 19 | 41 | 25 | 28 | 2 | 13 | 8 | 55 |
| 10 | 12 | 59 | 15 | 18 | 19 | 51 | 25 | 41 | 2 | 27 | 9 | 8 |
| 11 | 13 | 01 | 15 | 25 | 20 | 2 | 25 | 53 | 2 | 40 | 9 | 21 |
| 12 | 13 | 3 | 15 | 33 | 20 | 13 | 26 | 6 | 2 | 54 | 9 | 35 |
| 13 | 13 | 5 | 15 | 40 | 20 | 23 | 26 | 19 | 3 | 7 | 9 | 48 |
| 14 | 13 | 8 | 15 | 47 | 20 | 34 | 26 | 32 | 3 | 20 | 10 | 1 |
| 15 | 13 | 11 | 15 | 55 | 20 | 45 | 26 | 45 | 3 | 34 | 10 | 13 |
| 16 | 13 | 13 | 16 | 2 | 20 | 56 | 26 | 58 | 3 | 48 | 10 | 26 |
| 17 | 13 | 17 | 16 | 10 | 21 | 7 | 27 | 10 | 4 | 2 | 10 | 39 |
| 18 | 13 | 20 | 16 | 18 | 21 | 18 | 27 | 22 | 4 | 15 | 10 | 52 |
| 19 | 13 | 23 | 16 | 26 | 21 | 29 | 27 | 35 | 4 | 28 | 11 | 05 |
| 20 | 13 | 27 | 16 | 34 | 21 | 41 | 27 | 48 | 4 | 42 | 11 | 17 |
| 21 | 13 | 31 | 16 | 43 | 21 | 52 | 28 | 1 | 4 | 55 | 11 | 30 |
| 22 | 13 | 35 | 16 | 51 | 22 | 3 | 28 | 14 | 5 | 8 | 11 | 42 |
| 23 | 13 | 40 | 17 | 0 | 22 | 15 | 28 | 27 | 5 | 21 | 11 | 55 |
| 24 | 13 | 44 | 17 | 8 | 22 | 26 | 28 | 40 | 5 | 35 | 12 | 08 |
| 25 | 13 | 48 | 17 | 17 | 22 | 38 | 28 | 53 | 5 | 49 | 12 | 20 |
| 26 | 13 | 52 | 17 | 26 | 22 | 50 | 29 | 6 | 6 | 3 | 12 | 32 |
| 27 | 13 | 57 | 17 | 35 | 23 | 1 | 29 | 20 | 6 | 16 | 12 | 44 |
| 28 | 14 | 01 | 17 | 44 | 23 | 13 | 29 | 33 | 6 | 29 | 12 | 57 |
| 29 | 14 | 6 | 17 | 53 | 23 | 25 | 29 | 46 | 6 | 43 | 13 | 09 |
| 30 | 14 | 11 | 18 | 3 | 23 | 38 | 29 | 59 | 6 | 56 | 13 | 21 |
| 31 | 14 | 17 | 18 | 12 | | | 0 ♐ | 13 | | | 13 | 34 |

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